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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,921	03/13/2006	Stephen B. Murphy	103068-0003U	7285
24267 7590 09/13/2010 CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210				
EXAMINER DANEGA, RENEE A				
ART UNIT		PAPER NUMBER		
3736				
MAIL DATE		DELIVERY MODE		
09/13/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,921

Applicant(s)

MURPHY, STEPHEN B.

Examiner

Renee Danega

Art Unit

3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-14 and 22-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-14 and 22-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 22 is objected to because of the following informalities: Line one says "rising" and it is believed to be a . Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Konishi et al. ("Determination of acetabular coverage of the femoral head with use of a single anteroposterior radiograph. A new computerized technique").

Regarding claim 9, Konishi teaches a method executed using a data processor for determining transaxial rotation of a pelvis from a single fluoroscopic image without using a patient tracker comprising receiving a fluoroscopic image of said pelvis in the near AP direction; defining first and second landmarks of said pelvis on said image, said landmarks separated from each other in at least an anterior-posterior direction (Figure 3); determining the axial displacement of said landmarks on said image; and using said displacement to calculate with said data processor (C++ computer program on a personal computer) the transaxial rotation of the pelvis with respect to the plane of said fluoroscopic image (Appendix II) (page 1319) (page 1321 right column).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4-6, 10-11, 14, and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi as applied to claim 9 above in view of Sarin et al. (US 20040254586).

- Regarding claims 4, and 14 and 22, Konishi teaches a method executed with a processor for determining transaxial rotation of a pelvis, comprising receiving a information defining a coordinate system of said pelvis in the near AP direction; defining first and second landmarks of said pelvis, said landmarks separated from each other in at least an anterior-posterior

direction; determining the transaxial displacement of said landmarks on said image; and using said displacement to determine the transaxial rotations of said pelvis with respect to the plane of said image (see above). Konishi doesn't expressly teach using first and second landmarks to find the axial rotation in the near AP image. However, Sarin teaches a method of identifying landmarks separated from each other in at least an anterior posterior plane and using the landmarks to calculate axial and transaxial rotations of the pelvis in order to determine the three dimensional angular orientation of the pelvis to assist in surgery [0011] [0025] [0041] [0042] [0051] [0052]. It would have been obvious in view of Sarin to calculate both axial and transaxial rotations in Konishi in order to determine three dimensional angular orientation of the pelvis to assist in surgery

- Regarding claims 5-6 and 10-11 and 24-25, Konishi teaches identifying right and left landmarks and further contemplates a variety of different landmarks being used but doesn't expressly teach successful use of alternative landmarks. However, Sarin teaches a method for calculating axial and transaxial rotations wherein the first landmark is the pubic symphysis and the second landmark to comprise the midpoint of a line between the image points on the left and right sacroiliac joints [0025]. It would have been obvious in view of Sarin to try the pubic symphysis and

sacroiliac joints as different landmarks in Konishi in order to calculate pelvic tilt.

- Regarding claims 7-8 and 12-13, and 26-27 Konishi teaches normalizing the data using the distance between the teardrops (corrected values of measurements) (Figure 2C).
- Regarding claim 23, Konishi teaches accounting for the distance between the x-ray source and the image plane in calculating pelvic tilt (Figure 1).

Response to Arguments

Applicant's arguments filed 11/30/09 have been fully considered but they are not persuasive. Sarin doesn't teach taking an image but does teach manipulating landmarks on a display, or an image. DiGioia teaches mapping the landmarks on CT images and models (as cited) generated from fluoroscopic imaging (column 8, lines 59-67). Examiner refers to Chen's identification of two additional landmarks at the right and left teardrops as additional landmarks defining a second trajectory and enabling identification of rotation in 3 dimensional space to judge relative distance and translation with. Examiner takes normalized to mean that the displacement takes into account the likewise displacement of the second pair of points. As with any projection, the more points that are projected of the overall image, the higher the relative accuracy amongst the points.

Response to Arguments

3. Applicant's arguments, see pgs 8-9 and 13, filed 4/16/10, with respect to the rejection(s) of the claims under Sarin modified by Di Gioia have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Konishi who teaches using a single image to find pelvic rotation and additionally suggests other landmarks can be used in addition to those specifically provided.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renee Danega whose telephone number is (571)270-3639. The examiner can normally be reached on Monday through Thursday 8:30-5:00 eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RAD

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736